



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/318,105	05/24/1999	EMMANUEL GERLOVIN	PAS-094	9928

959 7590 10/04/2002

LAHIVE & COCKFIELD
28 STATE STREET
BOSTON, MA 02109

EXAMINER

DAY, HERNG-DER

ART UNIT	PAPER NUMBER
----------	--------------

2123

DATE MAILED: 10/04/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/318,105

Applicant(s)

GERLOVIN ET AL.

Examiner

Hereng-der Day

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Claims 1-26 have been examined.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
 - 2-1. The Draftsperson has objected to the drawings; see the copy of Form PTO-948 for an explanation.
 - 2-2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 60 in Figure 5. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The Examiner requests detailed information about the Pro/ENGINEER 2000i package referred to in the specification because it appears to be reasonably necessary to the examination of this application and cannot be found.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 2123

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-26 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicants have referred to the CAD package is the Pro/ENGINEER 2000i package from Parametric Technology Corporation of Waltham, Massachusetts, but failed to disclose the relevant and necessary details in the specification. For example, claim 13 discloses that the method of claim 8 wherein the integrating comprises adding parameters to the CAD model. There are two integrating steps disclosed in claim 8. Without undue experimentation, any person skilled in the art will not be able to decide which of the two steps directed at "integrating" (or both steps) comprise adding parameters to the CAD model in order to make and use the invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 13, 14, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7-1. Claim 13 recites the limitation "the integrating" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim. In claim 8, there are two occurrences of "integrating" (line 9 and line 14). For the purpose of claim examination, the

Examiner will presume that "the integrating" in claim 13 refers to the first occurrence of "integrating" (line 9) in claim 8.

7-2. Claim 14 recites the limitation "the integrating" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim. In claim 8, there are two occurrences of "integrating" (line 9 and line 14). For the purpose of claim examination, the Examiner will presume that "the integrating" in claim 14 refers to the first occurrence of "integrating" (line 9) in claim 8.

7-3. Claim 26 states that it is dependent on "claim 28" in line 1. Claim 28 does not exist. For the purpose of claim examination, the Examiner will presume that claim 26 refers to "claim 24" in line 1 of the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 1-2, 5-8, 11-14, 19-20, and 23-26 are rejected under 35 U.S.C. 102(a) as being anticipated by Fane "Your Table Is Waiting...", CADalyst, January 1999, pages 70-75.

9-1. Regarding claim 1, Fane discloses a computer system running a computer-aided design (CAD) package (Autodesk Mechanical Desktop, page 70, column 1, paragraph 1) and an external application program (EAP) (Microsoft Excel spreadsheet, page 74, Figure 5), a method, comprising the steps of:

Art Unit: 2123

providing a model of an object in the CAD package, wherein said model includes output data from the EAP (Excel spreadsheet, page 75, column 2, paragraph 1);

modifying the model (editing a value, page 72, column 3, paragraph 4 through page 74, column 1, paragraph 1);

determining that the modifying of the model requires recalculation of the output data from the EAP (creates a spreadsheet, page 74, column 2, paragraph 2); and

in response to the determining, sending new input data to the EAP and obtaining new output data from the EAP (current values, page 74, column 2, paragraphs 2-3).

9-2. Regarding claim 2, Fane further discloses a step of calling the EAP from the CAD package to obtain the new output data (current values, page 74, column 2, paragraphs 2-3).

9-3. Regarding claim 5, Fane further discloses that the EAP performs analysis on at least a portion of the model to produce the original output data and the new output data (cells within the spreadsheet can contain formulas and references to other cells within the spreadsheet, page 75, column 2, paragraph 1).

9-4. Regarding claim 6, Fane further discloses that the analysis is an engineering analysis (cells within the spreadsheet can contain formulas and references to other cells within the spreadsheet, page 75, column 2, paragraph 1).

9-5. Regarding claim 7, Fane further discloses a method comprises the steps of:

further modifying the model (editing a value, page 72, column 3, paragraph 4 through page 74, column 1, paragraph 1);

determining that the further modifying of the model requires further recalculation of the output data from the EAP (creates a spreadsheet, page 74, column 2, paragraph 2); and

Art Unit: 2123

in response to the determining that the further modifying of the model requires further recalculation of the output data, obtaining new output data from the EAP (current values, page 74, column 2, paragraphs 2-3).

9-6. Regarding claim 8, Fane discloses a computer system having a computer-aided design (CAD) package (Mechanical Desktop, page 70, column 1, paragraph 1) for manipulating a model of an object, a method, comprising the computer-implemented steps of:

exporting data from a CAD model in a CAD program to an external application program (EAP) (fills the current value in the cell of a spreadsheet, page 74, column 2, paragraph 2);

using the exported data as input data to execute the EAP and obtain output data from the EAP (cells within the spreadsheet can contain formulas and references to other cells within the spreadsheet, page 75, column 2, paragraph 1);

importing the output data into the CAD program from the EAP (current values, page 74, column 2, paragraph 3);

integrating the output data into the CAD model (current values, page 74, column 2, paragraph 3);

modifying the CAD model so that the input data to the EAP changes to new input data (editing a value, page 72, column 3, paragraph 4 through page 74, column 1, paragraph 1);

updating the output data by calling the EAP and passing the new input data to the EAP (creates a spreadsheet, page 74, column 2, paragraph 2); and

automatically integrating the updated output data into the CAD model without a user request (current values, page 74, column 2, paragraph 3).

Art Unit: 2123

9-7. Regarding claim 11, Fane further discloses that the CAD model is a feature-based model (Mechanical Desktop is a feature-based parametric solid modeler, page 70, column 1, paragraph 1).

9-8. Regarding claim 12, Fane further discloses that the CAD model is a parametric model (Mechanical Desktop is a feature-based parametric solid modeler, page 70, column 1, paragraph 1).

9-9. Regarding claim 13, Fane further discloses that the integrating comprises adding parameters to the CAD model (add specific values, page 74, column 2, paragraph 4 through page 75, column 1, paragraph 1);

9-10. Regarding claim 14, Fane further discloses that the integrating comprises adding geometric entities to the CAD model (add more rows, page 74, column 2, paragraph 4 through page 75, column 1, paragraph 1).

9-11. Regarding claim 19, Fane discloses a computer system running an external application program (EAP), and a computer-aided design (CAD) package with a model of an object that includes output data from the EAP, a computer-readable medium holding computer-executable instructions for performing a method, comprising the computer-implemented steps of:

modifying the model (editing a value, page 72, column 3, paragraph 4 through page 74, column 1, paragraph 1);

determining that the modifying of the model requires recalculation of the output data from the EAP (creates a spreadsheet, page 74, column 2, paragraph 2); and

in response to the determining, sending new input data to the EAP and obtaining new output data from the EAP (current values, page 74, column 2, paragraphs 2-3).

Art Unit: 2123

9-12. Regarding claim 20, Fane further discloses a step of calling the EAP from the CAD package to obtain the new output data (current values, page 74, column 2, paragraphs 2-3).

9-13. Regarding claim 23, Fane further discloses that the EAP performs analysis on at least a portion of the model to produce the output data and the new output data (cells within the spreadsheet can contain formulas and references to other cells within the spreadsheet, page 75, column 2, paragraph 1).

9-14. Regarding claim 24, Fane discloses a computer system having a computer-aided design (CAD) package for manipulating a model of an object, a computer-readable medium holding computer-executable instructions for performing a method, comprising the computer-implemented steps of:

importing output data into the CAD program (Mechanical Desktop, page 70, column 1, paragraph 1) from an external application program (EAP) (Excel spreadsheet, page 75, column 2, paragraph 1);

integrating the output data into the model (page 75, column 2, paragraph 1);

modifying the model so as to require updating of the output data (editing a value, page 72, column 3, paragraph 4 through page 74, column 1, paragraph 1); and

automatically updating the output data by calling the EAP with new input data without a user request (page 74, column 2, paragraphs 2-3).

9-15. Regarding claim 25, Fane further discloses that the model is feature-based (Mechanical Desktop is a feature-based parametric solid modeler, page 70, column 1, paragraph 1).

9-16. Regarding claim 26, Fane further discloses that the model is parametric (Mechanical Desktop is a feature-based parametric solid modeler, page 70, column 1, paragraph 1).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3-4, 9-10, 15-18, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fane "Your Table Is Waiting...", CADalyst, January 1999, pages 70-75, in view of Cottrell et al., "CHDStd - A Model for Deep Submicron Design Tools", Design Automation Conference 1998, Proceedings of the ASP-DAC 1998, Asia and South Pacific, pages 249-255.

11-1. Regarding claim 3, Fane discloses that the Mechanical Desktop establishes a link to an external Microsoft Excel spreadsheet (page 74, Figure 5) but fails to explicitly disclose the step of registering the EAP with the CAD package. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callback registration includes the function to be called and optional application-data to be passed (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register the EAP with the CAD package to establish a link from the Mechanical Desktop to the Microsoft Excel spreadsheet to improve the portability.

11-2. Regarding claim 4, Fane discloses that the Mechanical Desktop establishes a link to an external Microsoft Excel spreadsheet (page 74, Figure 5) but fails to explicitly disclose the registration of a callback to the EAP from the CAD package. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callbacks can be registered for add, delete, or modify events, for example, setting a particular property value, on many objects (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register a callback to the EAP from the CAD package to establish a link from the Mechanical Desktop to the Microsoft Excel spreadsheet to improve the portability.

11-3. Regarding claim 9, Fane discloses that the Mechanical Desktop establishes a link to an external Microsoft Excel spreadsheet (page 74, Figure 5) but fails to explicitly disclose the step of registering the EAP with the CAD program. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callback registration includes the function to be called and optional application-data to be passed (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register the EAP with the CAD program to establish a link from the Mechanical Desktop to the Microsoft Excel spreadsheet to improve the portability.

11-4. Regarding claim 10, Fane discloses that the Mechanical Desktop establishes a link to an external Microsoft Excel spreadsheet (page 74, Figure 5) but fails to explicitly disclose the

Art Unit: 2123

registration of a callback that is called from the CAD program to access the EAP. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callbacks can be registered for add, delete, or modify events, for example, setting a particular property value, on many objects (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register a callback that is called from the CAD program to access the EAP to establish a link from the Mechanical Desktop to access the Microsoft Excel spreadsheet to improve the portability.

11-5. Regarding claim 15, Fane discloses a computer-aided design (CAD) system (Mechanical Desktop, page 70, column 1, paragraph 1), comprising:

- a CAD program (a part generated by the CAD program is shown in Figure 6, page 75);

- an external application program (EAP) that is external to the CAD program (Excel spreadsheet, page 75, Figure 6);

- a model of an object that contains output data from the EAP (page 75, Figure 6);

Fane does not explicitly disclose a registration facility. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callbacks can be registered for add, delete, or modify events, for example, setting a particular property value, on many objects (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

Applicants' invention to register the EAP with the CAD program so that the CAD program calls

Art Unit: 2123

the EAP when the output data from the EAP in the model need updating as a result of changes to the model to improve the portability.

11-6. Regarding claim 16, Fane discloses a computer-aided design (CAD) system but fails to explicitly disclose a registration facility to register a callback from the CAD program to the EAP. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callbacks can be registered for add, delete, or modify events, for example, setting a particular property value, on many objects (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register a callback from the CAD program to the EAP to improve the portability.

11-7. Regarding claim 17, Fane further discloses that the model is a feature-based model (Mechanical Desktop is a feature-based parametric solid modeler, page 70, column 1, paragraph 1).

11-8. Regarding claim 18, Fane further discloses that the model is a parametric model (Mechanical Desktop is a feature-based parametric solid modeler, page 70, column 1, paragraph 1).

11-9. Regarding claim 21, Fane discloses that the Mechanical Desktop establishes a link to an external Microsoft Excel spreadsheet (page 74, Figure 5) but fails to explicitly disclose the step of registering the EAP with the CAD package. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callback registration includes the function to be called and optional application-data to be passed (page

Art Unit: 2123

252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register the EAP with the CAD package to establish a link from the Mechanical Desktop to the Microsoft Excel spreadsheet to improve the portability.

11-10. Regarding claim 22, Fane discloses that the Mechanical Desktop establishes a link to an external Microsoft Excel spreadsheet (page 74, Figure 5) but fails to explicitly disclose the registration of a callback to the EAP from the CAD package. However, Cottrell et al. teach a callback feature that allows an application to register methods to be invoked on specific object events. Callbacks can be registered for add, delete, or modify events, for example, setting a particular property value, on many objects (page 252, column 1, paragraph 5). With a callback, program code can be easily modularized to take advantage of this event-driven processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to register a callback to the EAP from the CAD package to establish a link from the Mechanical Desktop to the Microsoft Excel spreadsheet to improve the portability.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference to Akasaka et al., U.S. Patent No. 4,989,166 issued January 29, 1991, is cited as teaching a method of registering in advance analysis programs.

Reference to Liang et al., U.S. Patent No. 5,182,797 issued January 26, 1993, is cited as teaching a multi-processor graphics system for displaying hierarchical data structures.

Reference to Hazama et al., U.S. Patent No. 6,212,441 issued April 3, 2001, and filed January 14, 1998, is cited as teaching a method for managing and distributing design and manufacturing information.

Reference to Han et al., U.S. Patent No. 6,392,645 issued May 21, 2002, and filed March 15, 1999, is cited as teaching a three dimensional geometric modeling system.

Reference to Beauchamp et al., U.S. Patent No. 6,434,441 issued August 13, 2002, and filed November 5, 1998, is cited as teaching a method for designing an article of manufacture.

Reference to Deitz, "CAD and FEA Models Converge", Mechanical Engineering, February 1997, Vol. 119, Issue 2, page 20 is cited as disclosing that ANSYS/AutoFEA 3D from ANSYS Inc. in Houston, Pennsylvania has been released for use with solid models generated by AutoCAD release 13 or parametric solid models by Mechanical Desktop from Autodesk Inc. in San Rafael, California.

Reference to Deitz, "Design Optimization", Mechanical Engineering, October 1998, Vol. 120, Issue 10, page 24 is cited as disclosing that MSC/InCheck 2.0 from The MacNeal-Schwendler Corp. of Los Angeles has been released for use with parametric solid models by Mechanical Desktop from Autodesk Inc. in San Rafael, California.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Herng-der Day whose telephone number is (703) 305-5269. The examiner can normally be reached on 8:30 - 17:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J Teska can be reached on (703) 305-9704. The fax phone numbers for the

Art Unit: 2123

organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Herng-der Day
September 30, 2002


SAMUEL BRODA, ESQ.
PATENT EXAMINER ,